

Work Order ID 160451

Thursday, May 04, 2017 1:44:49 PM

160451

Page 1

Item ID: 646.3011 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: RH Half
 Start Date: 5/4/2017 Start Qty: 10.00 ***10*** Cust Item ID:
 Required Date: 5/29/2017 Req'd Qty: 10.00 ***10*** Customer:
 Reference: (P.A.)SCHEDULED/S

Approvals: Process Plan: **DAS** 21 Date: **MAY 04 2017** Tooling: Date: Run Start ***NR1***
 QC: **9-89** Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
646.3000	N/C

100	BAND SAW	0.00				10			MK 2017-05-18
100									
Bandsaw	Memo	0.08							
Jeaspa Bandsaw	Cut Blank at 9.700"								

110	HAAS CNC VERTICAL MACHINING #1	1.91				209	1		17-05-18
110									
HAAS 1	Memo	2.56							
HAAS CNC vertical machine #1	1-Machine per folio FB158 DWG REV: <u>NK</u> FOLIO REV: <u>AA</u>								
	2- deburr and break all sharp edges								

P.T.O

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>160451</u> Part No. <u>646.3011</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube</td><td style="width:15%;">Cross tube</td><td style="width:15%;">Water Jet</td><td style="width:15%;">Engineering</td></tr> <tr> <td>Machining</td><td>Small Fab</td><td>Prod. Eng. Coord.</td><td>Quality</td></tr> <tr> <td>Thermoforming</td><td>Finishing</td><td>Rec/Store/Packaging</td><td>Other</td></tr> <tr> <td>Large Fab</td><td>Composite</td><td>Supplier</td><td></td></tr> </table>						Skid-tube	Cross tube	Water Jet	Engineering	Machining	Small Fab	Prod. Eng. Coord.	Quality	Thermoforming	Finishing	Rec/Store/Packaging	Other	Large Fab	Composite	Supplier																																																	
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Large Fab	Composite	Supplier																																																																							
Date: <u>17-05-18</u>		Step #: <u>110</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval <u>PD</u>																																																																			
Description Work Order Deviation				Disposition		17-05-24																																																																			
Dim .109" - .005 is .097" operator error				Scrap part & destroyed		Completed By <u>PD</u> 17-05-18																																																																			
						Lead hand / Supervisor Approval Verification <u>PD</u> 17/05/23																																																																			
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Root Cause <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Environment</td><td style="width:15%;">No Re-verification</td><td style="width:15%;">Pressure/Forced</td></tr> <tr> <td>Design</td><td>☒ Operator</td><td>Bending</td></tr> <tr> <td>Doc/Data</td><td>Offset/Setup</td><td>Centre Not Concentric</td></tr> <tr> <td>Equip/Tooling</td><td>Supplier</td><td>Cracks</td></tr> <tr> <td>Handling/Pre</td><td>Training</td><td>Crimp/Kink/Ripple/Wave</td></tr> <tr> <td>Material</td><td>Use for Testing</td><td>Cuffs</td></tr> <tr> <td>Internal Transport</td><td>Poor Information</td><td>Crushing</td></tr> <tr> <td>Tribal Knowledge</td><td>Rushing</td><td>Heat Treat</td></tr> <tr> <td>LOA</td><td>Product Improvement</td><td>Wave/Twist in Tube</td></tr> <tr> <td>Substation</td><td>Process Improvement</td><td>Marks/Chatter</td></tr> <tr> <td>Past Expiry Date</td><td>Manufacturing Process</td><td></td></tr> <tr> <td>Misidentified</td><td>Past Due</td><td></td></tr> </table>				Environment	No Re-verification	Pressure/Forced	Design	☒ Operator	Bending	Doc/Data	Offset/Setup	Centre Not Concentric	Equip/Tooling	Supplier	Cracks	Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Material	Use for Testing	Cuffs	Internal Transport	Poor Information	Crushing	Tribal Knowledge	Rushing	Heat Treat	LOA	Product Improvement	Wave/Twist in Tube	Substation	Process Improvement	Marks/Chatter	Past Expiry Date	Manufacturing Process		Misidentified	Past Due		FAULT CATEGORY <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Temperature/Cure</td><td style="width:15%;">Power Loss/Surge</td><td style="width:15%;">Positioned Wrong</td></tr> <tr> <td>☒ Set-up</td><td>Folio/Program</td><td>Outside Dimensions</td></tr> <tr> <td>BOM/Route</td><td>Grain</td><td>Over/Under tolerance</td></tr> <tr> <td>Broken/Damage/Defect</td><td>Weld</td><td>Part Incorrect</td></tr> <tr> <td>Inspection Incomplete/Unqualified</td><td>Wrong Stock Pulled</td><td>Part Lost/Missing</td></tr> <tr> <td>Contamination</td><td>Out of Sequence</td><td>Part Moved</td></tr> <tr> <td>Countersink</td><td>Off-set</td><td>Drawing</td></tr> <tr> <td>Cut Too Short</td><td>Mislabeled</td><td>Finish</td></tr> <tr> <td>Instructions Incomplete/Unclear</td><td>Fit/Function</td><td>Misread</td></tr> <tr> <td>Drill Holes</td><td>Misaligned/off center</td><td>Turning Sequence</td></tr> </table>				Temperature/Cure	Power Loss/Surge	Positioned Wrong	☒ Set-up	Folio/Program	Outside Dimensions	BOM/Route	Grain	Over/Under tolerance	Broken/Damage/Defect	Weld	Part Incorrect	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing	Contamination	Out of Sequence	Part Moved	Countersink	Off-set	Drawing	Cut Too Short	Mislabeled	Finish	Instructions Incomplete/Unclear	Fit/Function	Misread	Drill Holes	Misaligned/off center	Turning Sequence
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Page 2

Item ID: 646.3011

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: RH Half

Start Date: 5/4/2017 Start Qty: 10.00

10

Cust Item ID:

Required Date: 5/29/2017 Req'd Qty: 10.00

10

Customer:

Reference: (P.A.)SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC1- Inspection performed by CMM	0.00							
120									
QC	Memo	0.20							
Quality Control	Inspect on CMM as per folio CMMA029. DWG REV: _____ CMM PROG. REV: _____								
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.20							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140									
Outsource4	Memo	1,800.00							
Outsource process - Anodize	Issue P/O to ATG : <u>36731</u>								
	1- Black Anodize as per Dwg 646.3000								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Conformity is required								

9 1 17-05-16

9 1 DAS 44 17-05-24 9-89

9 JUN 16 2017 DAS 13 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
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Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER : _____			

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.20							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.20							
Quality Control	1.8 mils thickness prima								
180	Identify as per dwg & Stock Location <u>CCF102</u>	0.00							
180									
Packaging	Memo	0.10							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

9x SP17-7-10

9 DAS 38 9-89 JUL 10 2017

9 11 2017 DAS 6 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 160451***160451***

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Thursday, May 04, 2017 1:44:49 PM

Item ID: 646.3011

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: RH Half

Stop

NS2

Start Date: 5/4/2017 Start Qty: 10.00

10

Cust Item ID:

Required Date: 5/29/2017 Req'd Qty: 10.00

10

Customer:

Reference: (P.A.)SCHEDULED/S

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

100

QC

Memo

0.10

Quality Control

17/7/12 

W 17-07-11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Picklist Print

Thursday, May 04, 2017 1:44:54 PM

Work Order ID: 160451

160451

Parent Item: 646.3011

646 3011

Parent Item Name: RH Half

Start Date: 5/4/2017

Required Date: 5/29/2017

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 13/01/14 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M7075T6B6.000X0.250

Purchased

No

100

f

24.7490

0.809

8.515789

~~*M7075T6B6.000X0.250*~~

**

8.490

MK 2017-05-18

7075-T6 BAR 6.000" X 0.250"

ML

M7075+65.250

UP 17/5/14 PER DWG

Location

Loc Qty

Loc Code

MAT005

24.749

M133426

3.083

M136103

2.699

→ M136839 (4)

6.967

→ M137090 (6)

12

3.396
5.094

17.05.05

Please see attach Pablo's E-mail
for material approval.

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

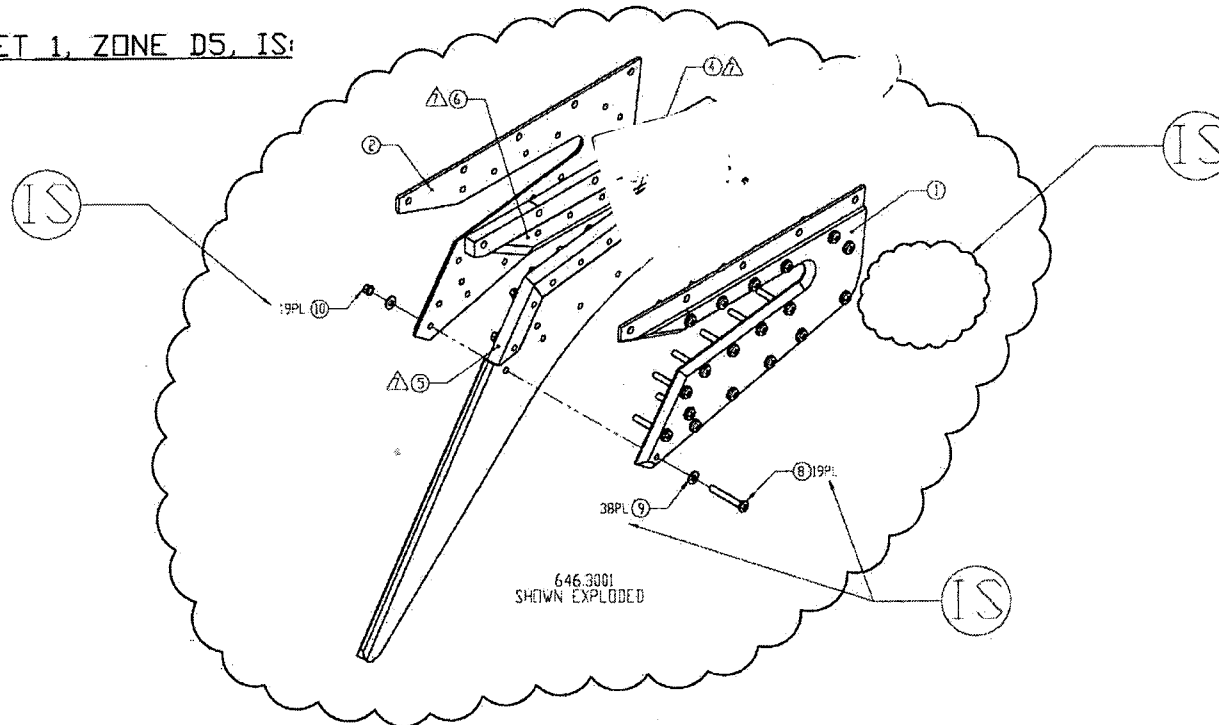
QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
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Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
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Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO.		02195		SHEET 1 OF 4	
	DWG NO.	646.3000	REV: N/C	PREPARED BY	S. HUFF	DATE: 01/05/09
	DWG TITLE:		LOWER CUTTER ASSY			
	APPROVED BY:	ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF:	NEXT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS					

SHEET 1, ZONE D5, IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 160457 MJS
1704-28

10	R	601.1541	19	LOCKNUT	MS21042L08
9	R	601.2764	38	WASHER	NAS1149FN832P
8	R	601.2765	19	SCREW	MS27039-0819
7	D	601.2766	2	RIVET	MS20470AD5-18
			.3001		
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:				CHANGE CATEGORY	DER REVIEW REQUIRED
☐ MDL ☒ INSTALL INSTRUC ☒ ICA ☐ FMS ☒ BOM				☐ MAJOR ☒ MINOR	☐ YES ☒ NO

DQA: _____ Date: _____



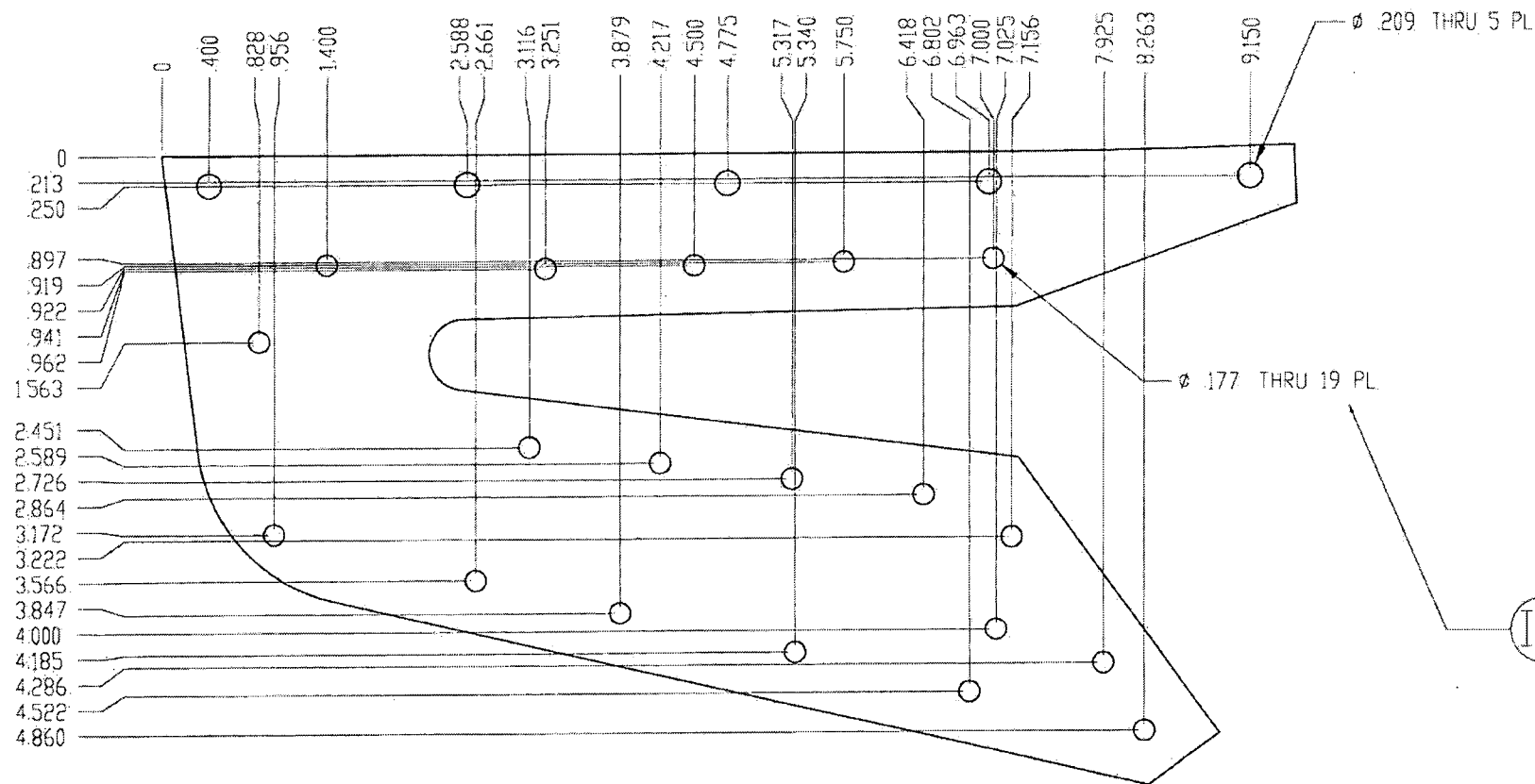
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

SHEET 3 IS:



SECTION A-A

2
C7

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

DQA: _____ Date: _____

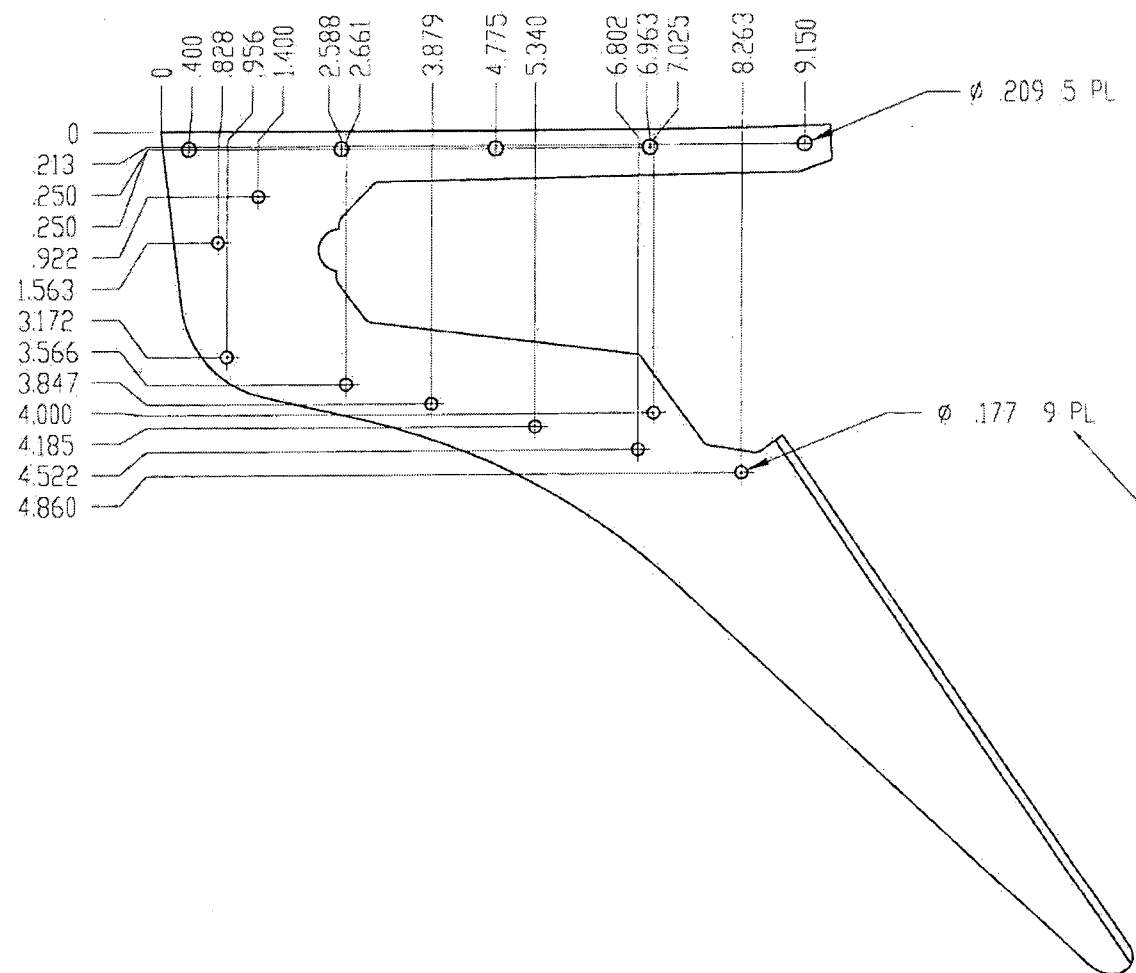


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence					
				OTHER : _____					

SHEET 5 IS:

SECTION F-F



F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

DQA: _____ Date: _____



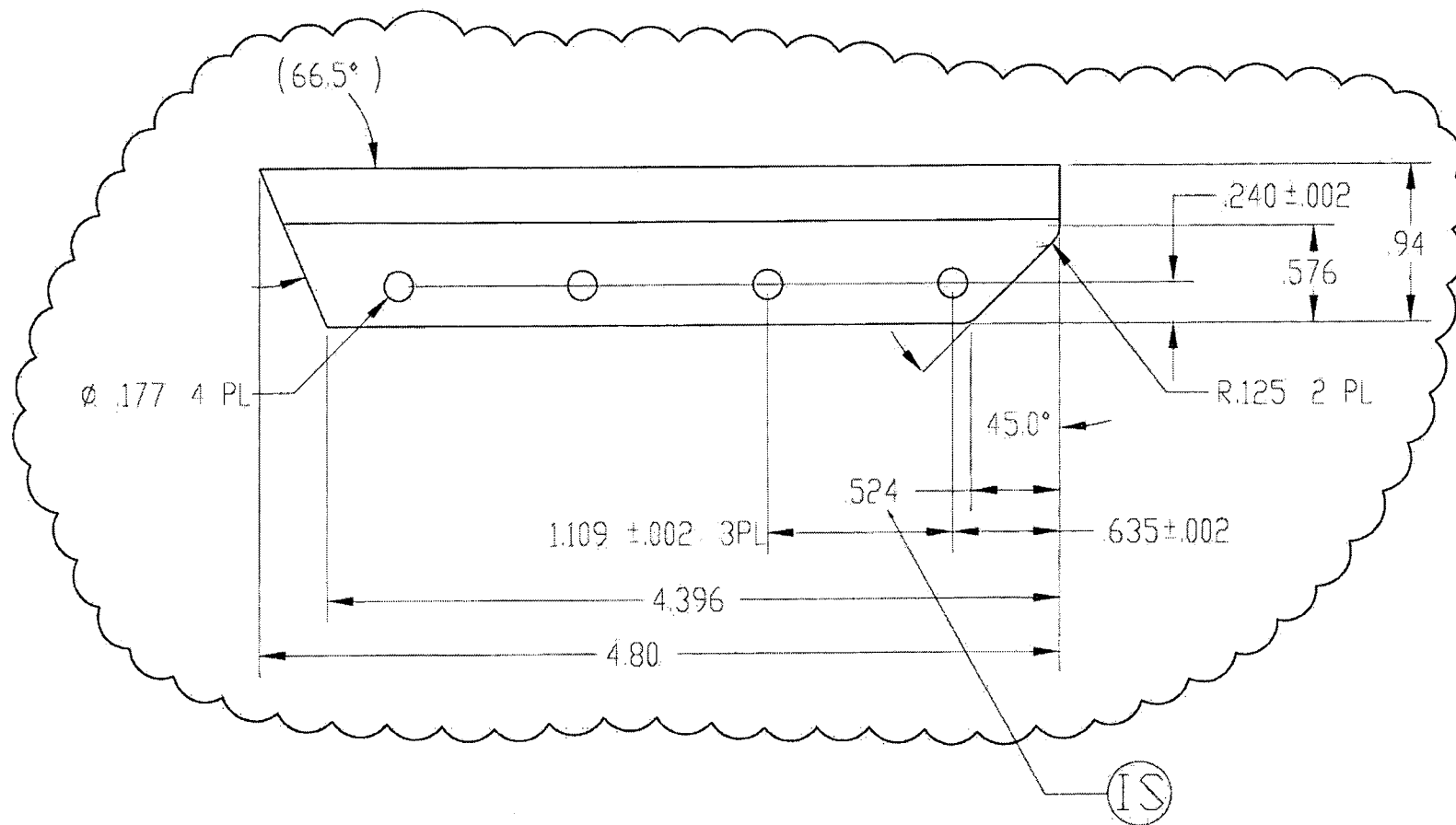
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐	OTHER :						
Misidentified ☐	☐	Past Due ☐							

SHEET 6, ZONE C4, IS:



F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

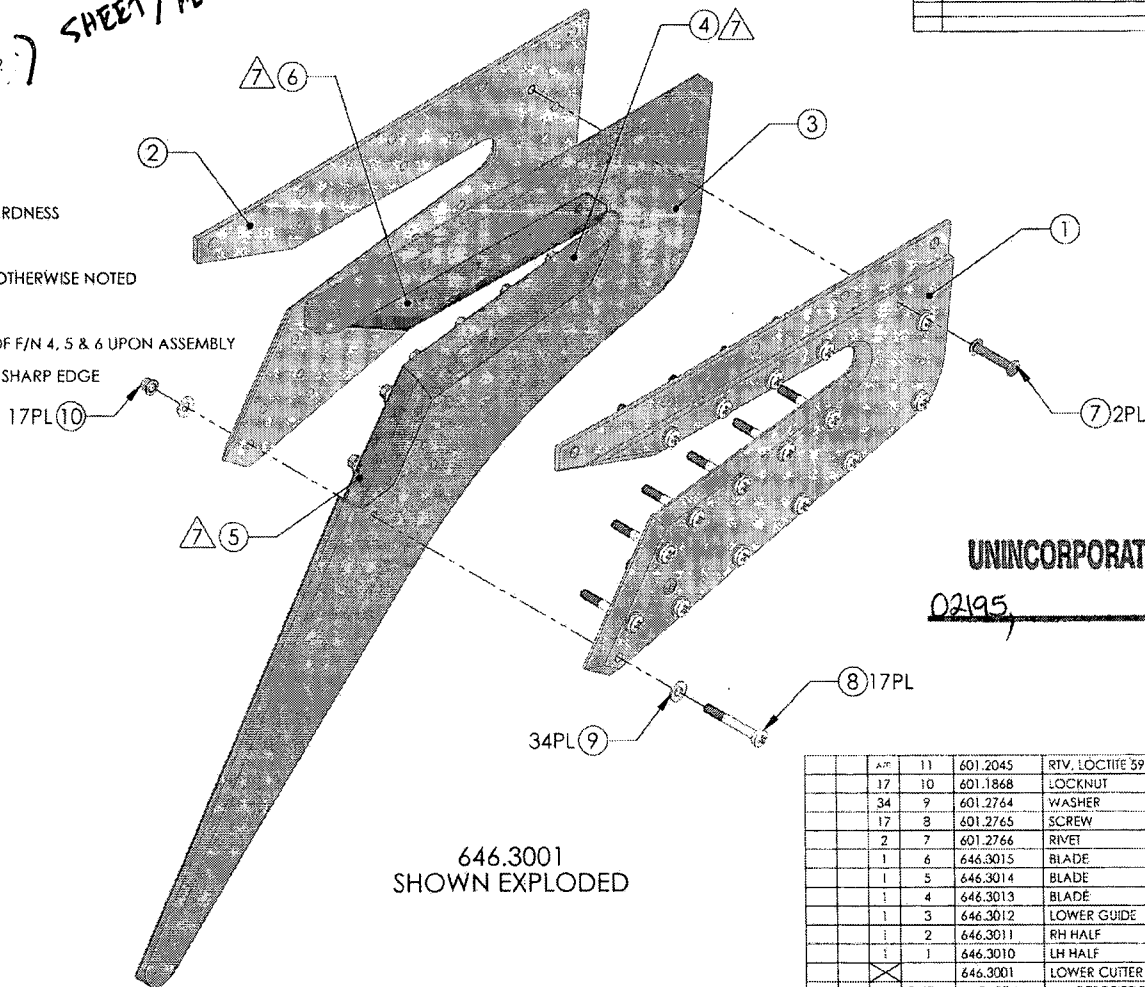
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 11 AS REQUIRED TO ALL FAYING SURFACES OF F/N 4, 5 & 6 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE

SHEET / PLATE



UNINCORPORATED ECN(s)

02195

QTY	REV	DATE	DESCRIPTION	MATL	SPEC.
1	1	11	601.2045	RTV, LOCTITE 598	
1	1	17	10	601.1868	LOCKNUT
1	1	34	9	601.2764	WASHER
1	1	17	8	601.2765	SCREW
1	1	2	7	601.2766	RIVET
1	1	1	6	646.3015	BLADE
1	1	1	5	646.3014	BLADE
1	1	1	4	646.3013	BLADE
1	1	1	3	646.3012	LOWER GUIDE
1	1	1	2	646.3011	RH HALF
1	1	1	1	646.3010	LH HALF
1	1	1	1	646.3001	LOWER CUTTER ASSY
QTY	FIND #	PART #	DESCRIPTION	MATL	SPEC.
1	1	1	646.3001	LOWER CUTTER ASSY	

NEXT ASSY (S)
 646.4000

OFFICIAL DATE: 08-20-08
 DRAWN BY: P. MANNING
 CHECKED BY: J. KOSKINEN
 DESIGNED BY: P. MANNING
 APPROVED BY: J. KOSKINEN
 CONTRACT NO.:

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 1/16" MINIMUM
 1/8" MINIMUM
 1/4" MINIMUM
 3/8" MINIMUM
 1/2" MINIMUM
 3/4" MINIMUM
 1" MINIMUM
 1 1/2" MINIMUM
 2" MINIMUM
 3" MINIMUM
 4" MINIMUM
 6" MINIMUM
 8" MINIMUM
 12" MINIMUM
 18" MINIMUM
 24" MINIMUM
 36" MINIMUM
 48" MINIMUM
 60" MINIMUM
 72" MINIMUM
 84" MINIMUM
 96" MINIMUM
 108" MINIMUM
 120" MINIMUM

APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA 92056-3512 (760)724-5300

LOWER CUTTER ASSY

SCALE: NONE

SHEET 1 OF 8

DQA: _____ Date: _____



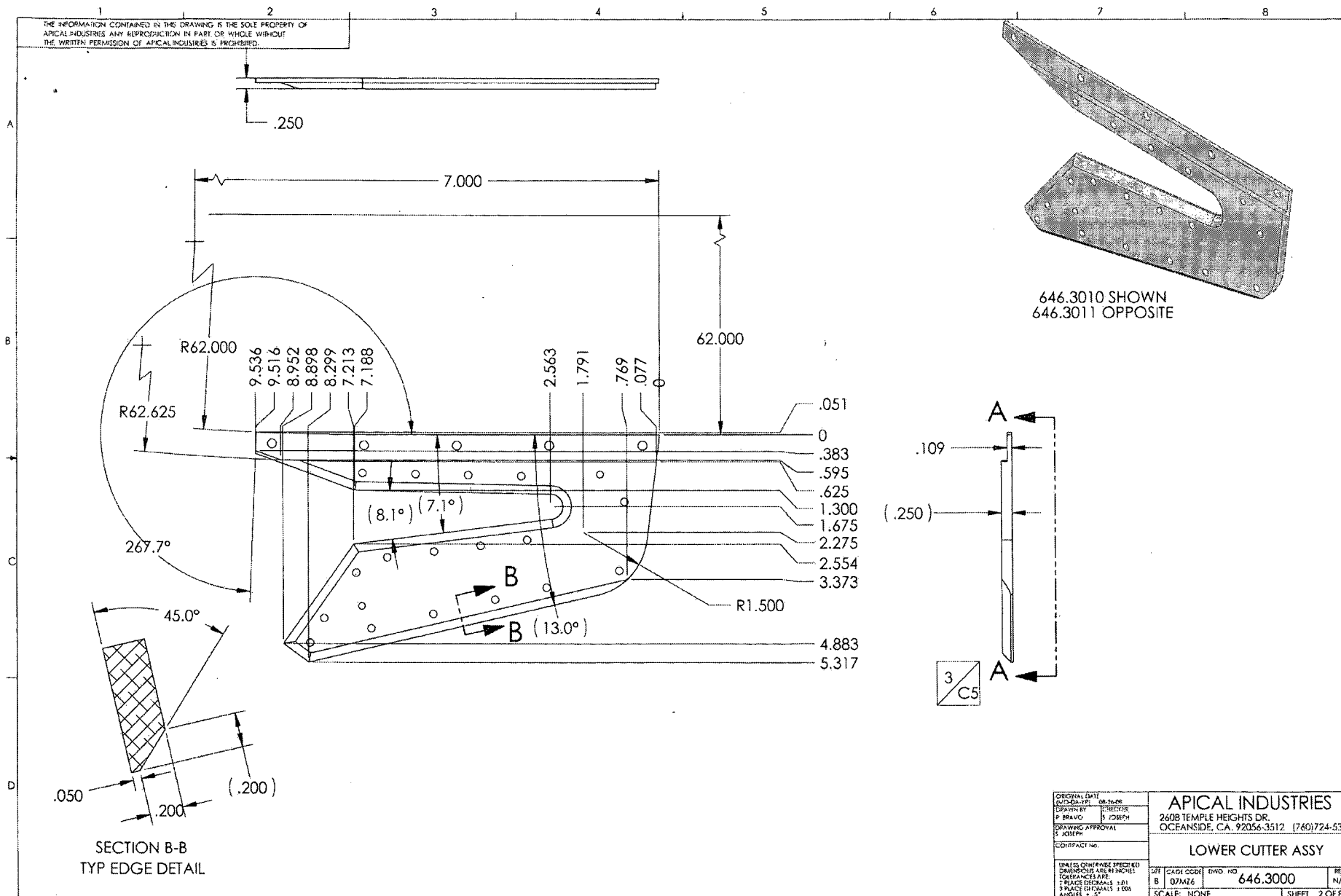
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

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DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

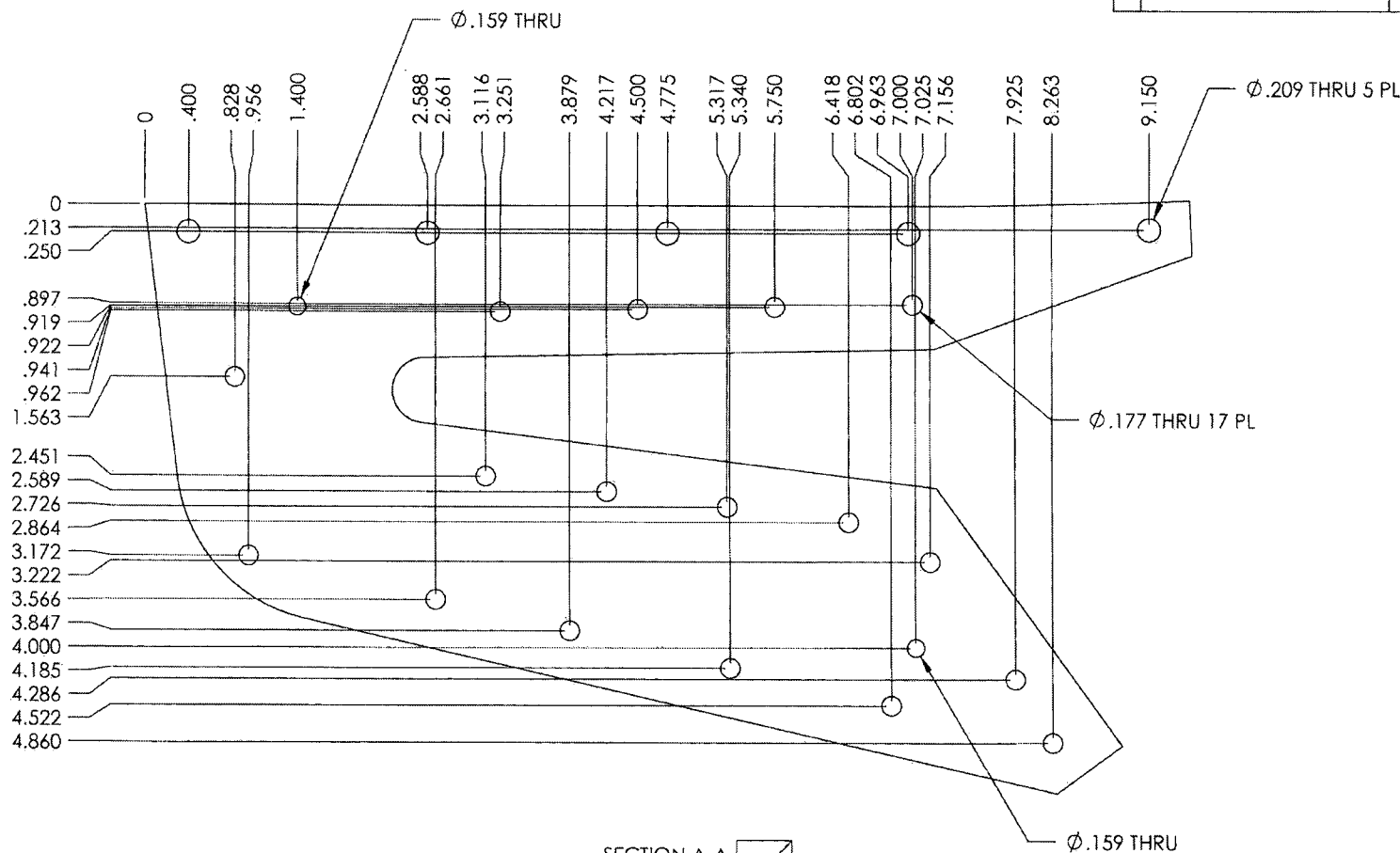
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

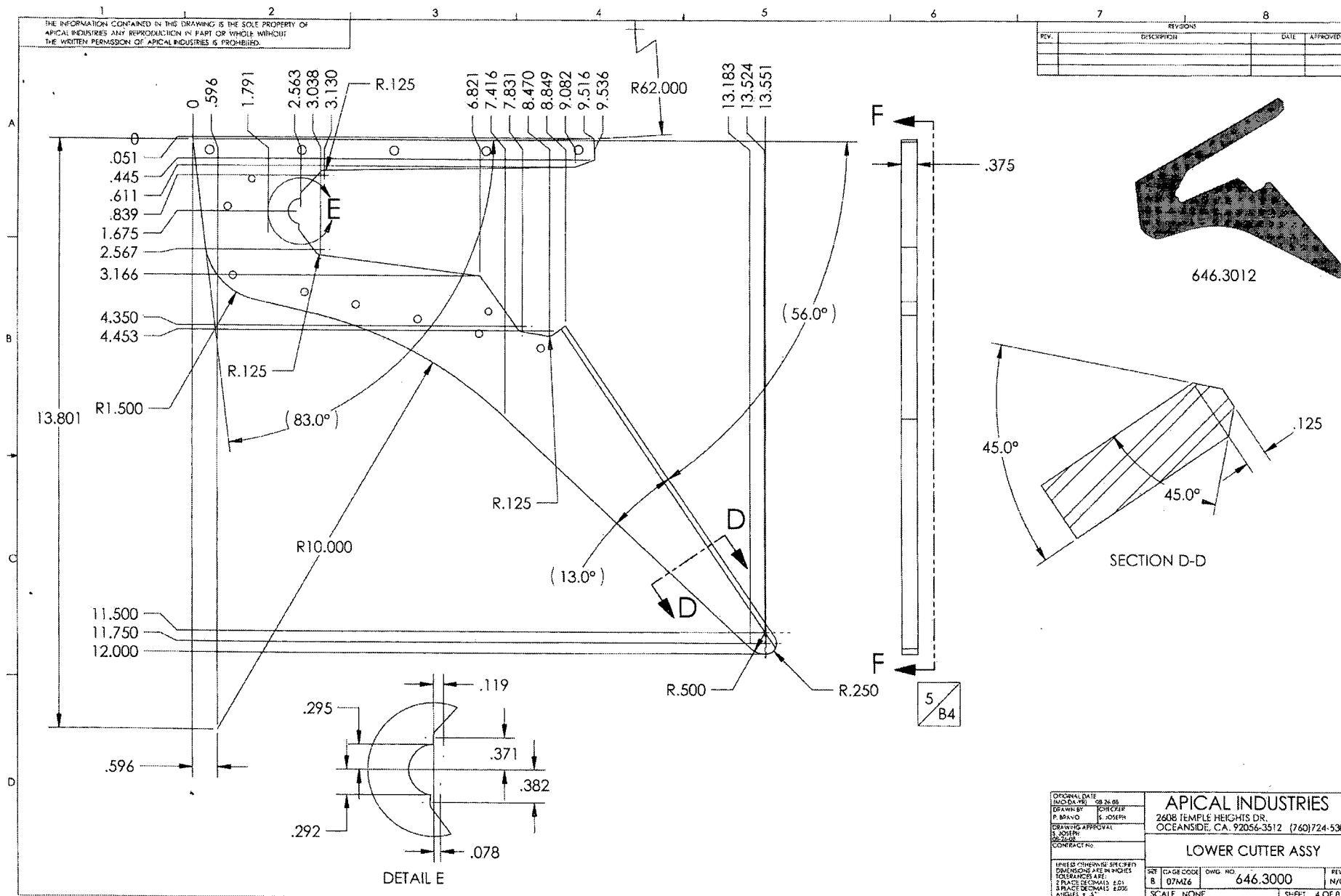
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



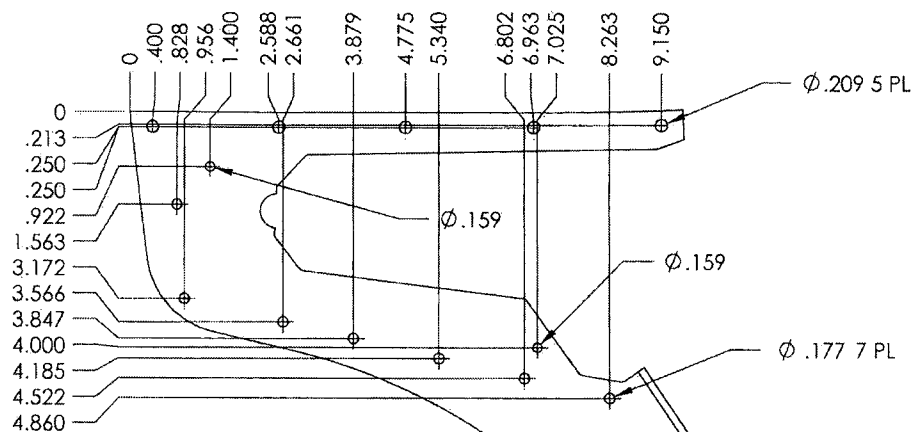
ORIGINAL DATE 08-26-66		APICAL INDUSTRIES	
DRAWN BY P. BRAYO		2608 TEMPLE HEIGHTS DR.	
CHECKED BY S. JOSEPH		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL E. JOHNSON		LOWER CUTTER ASSY	
E. JOHNSON		REV. N/C	
E. JOHNSON		646.3000	
E. JOHNSON		SCALE NONE	
E. JOHNSON		SHEET 3 OF 8	

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

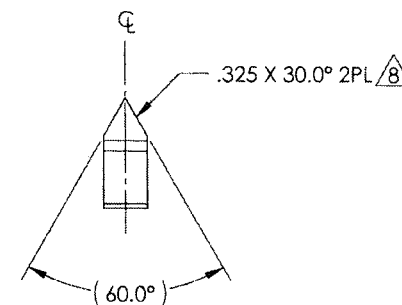
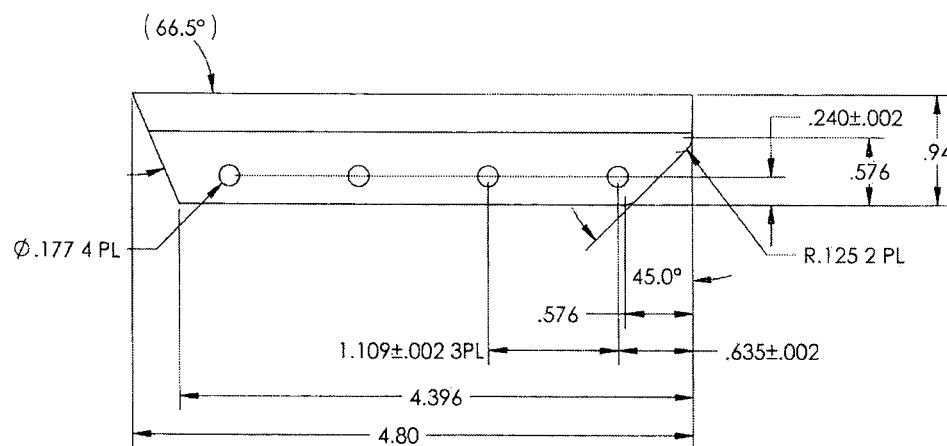
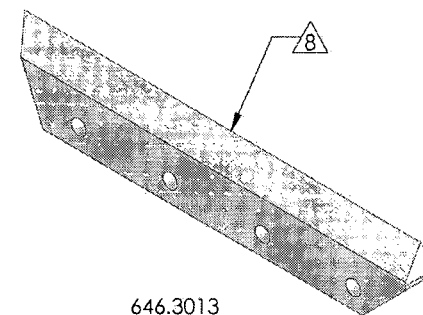


SECTION F-F 4
B6

ORIGINAL DATE 08-21-09		APICAL INDUSTRIES	
DRAWN BY P. BRAVO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY D. JOSEPH		LOWER CUTTER ASSY	
APPROVED BY D. JOSEPH		SCALE NONE	
CONTRACT NO.		SHEET 5 OF 8	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS $\pm .01$ 3 PLACE DECIMALS $\pm .005$ ANGLES $\pm .2^\circ$		REV. B	N/C

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

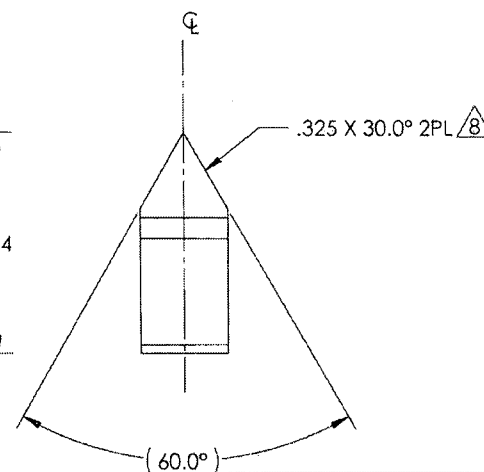
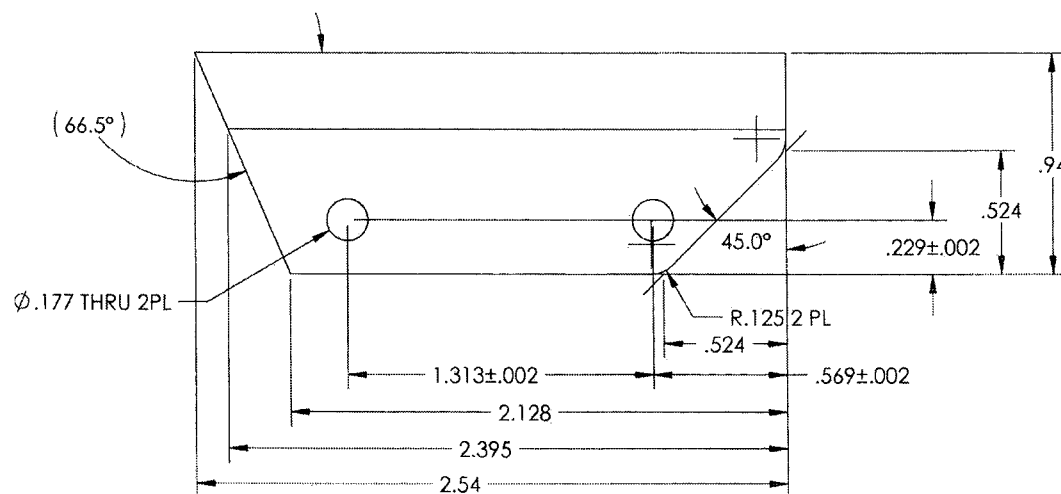
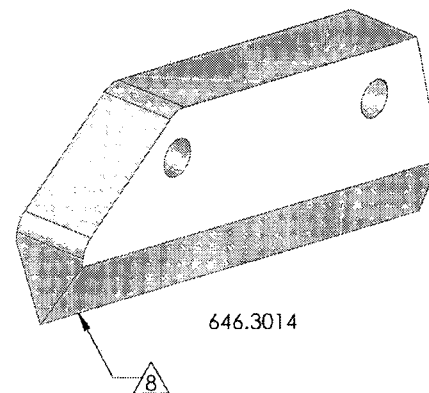
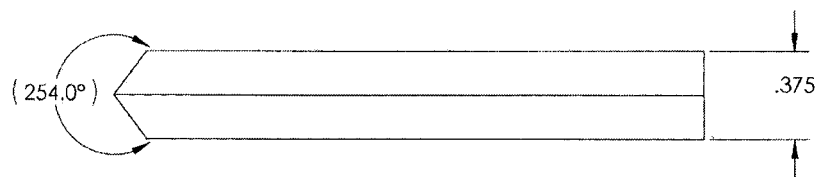


ORIGINAL DATE: 08-29-08
 MODEL NO.: 646.3000
 DRAWN BY: J. BRAYO
 CHECKED BY: J. BRAYO
 DRAWING APPROVAL: J. BRAYO
 CONTRACT NO.:
 UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 2 PLACE DECIMALS ±.01
 3 PLACE DECIMALS ±.005
 ANGLES ±.5°

APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA. 92056-3512 (760)724-5300
LOWER CUTTER ASSY
 SHEET: 6 OF 8
 SCALE: NONE
 REV: N/C
 DATE: 07/21/16
 646.3000

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE 08-26-08
 DESIGNED BY S. JOSEPH
 DRAWN BY S. JOSEPH
 P. SPAYO
 CHECKED
 DELIVERED APPROVAL
 1. 10/1/11
 10-26-08
 CONTRACT NO.

APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA. 92056-3512 (760)724-5300

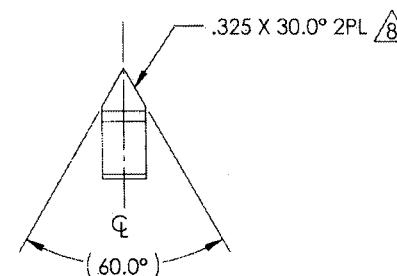
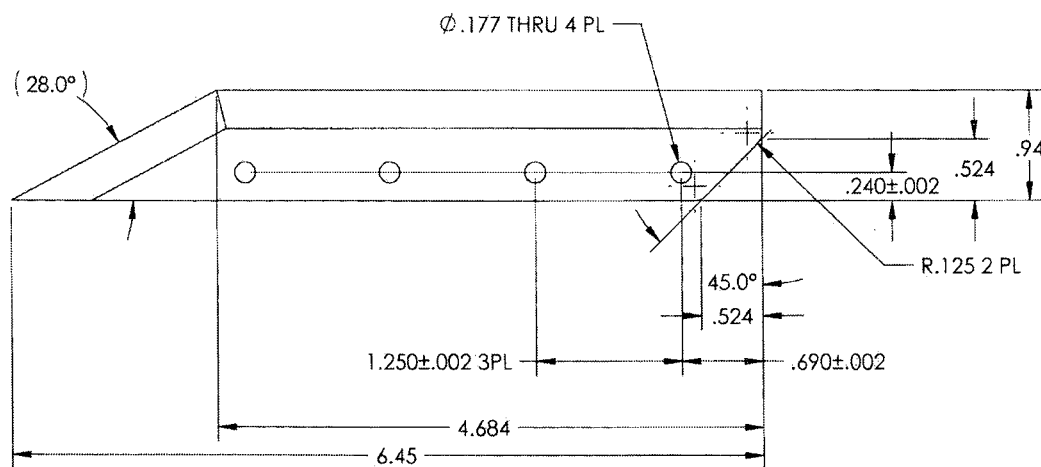
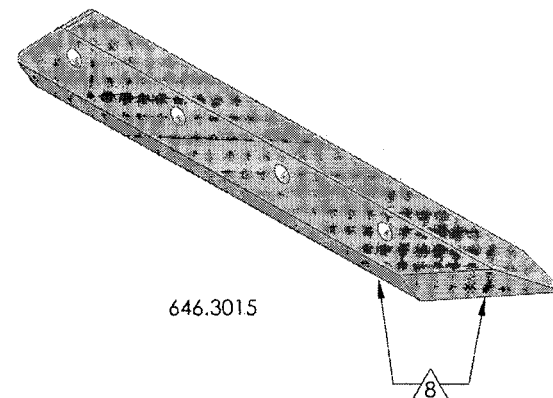
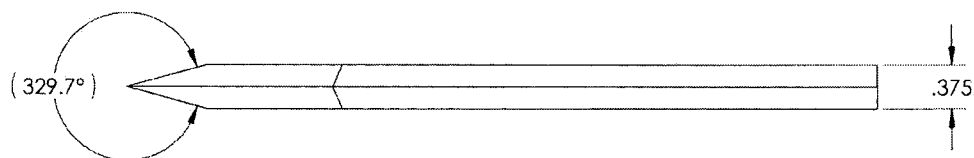
LOWER CUTTER ASSY

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 2 PLACE DECIMALS ±.01
 3 PLACE DECIMALS ±.005
 ANGLES ±.5°

SHEET 1 OF 8
 CAGE CODE 07M76
 DWG. NO. 646.3000
 SCALE NONE
 SHEET 7 OF 8

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REV	DESCRIPTION	DATE	APPROVED



GENERAL DATE REV. DATE		2021-08	
DRAWN BY		CHECKER	
P. BRAY		S. JOHNSON	
DRAWING APPROVAL		DATE	
S. JOHNSON		08/08/21	
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ± .5°			
SER	CAGE CODE	DWG. NO.	REV.
B	07M26	646.3000	N/C
SCALE		NONE	
SHEET		8 OF 8	

APICAL INDUSTRIES
2508 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

LOWER CUTTER ASSY

David Duval

From: Chantal Lavoie
Sent: May-05-17 1:53 PM
To: David Duval
Subject: FW: 17814
Attachments: M7075T6B-RevB.pdf; 646.3000 NC1 Lower Cutter Assy [ECN 02195].pdf; D4842-RevB.pdf

From: Chantal Lavoie
Sent: Tuesday, May 02, 2017 11:57 AM
To: 'Eric Downing' <edowning@dartaero.com>
Subject: FW: 17814

Hi Eric,
Check this e-mail, for 7075-t6 bar or cut from plate.
Thanks
Chantal

From: Chantal Lavoie
Sent: Tuesday, May 10, 2016 1:20 PM
To: Chris Provencal <cprovencal@dartaero.com>
Cc: 'Eric Downing' <edowning@dartaero.com>; Linda Lacelle <llacelle@dartaero.com>; Patrick Smith <psmith@dartaero.com>
Subject: FW: 17814

Hi Chris,
I found another problem when ordering material, see attached for mill spec's 7075-T6.
Material spec's call out 7075-T6/T651 etc..... But with no indication of AMS or QQ-A accepting T651.
Please advise if you can sign deviation would need to order some material.

Note: this material is used for cable cutter part if you look at dwg from Apical (646.3000) they call out 7075-T651 under AMS-QQ-A-250/12, see attached for dwg files.

Dart dwg (D4842) only call out 7075-t6 see attached for dwg files. 95% of 7075-T6 material will be under 7075-T651/AMS-QQ-A-250/12.

Thanks
Chantal

From: Linda Lacelle
Sent: Tuesday, May 10, 2016 1:02 PM
To: Chantal Lavoie <clavoie@dartaero.com>
Subject: FW: 17814

From: Pablo Bravo [<mailto:pbravo@apicalindustries.com>]
Sent: Friday, September 21, 2012 11:08 AM
To: 'Jean-Luc Menard' <jmenard@dartaero.com>; 'Linda Lacelle' <llacelle@dartaero.com>; 'David Shepherd' <dshepherd@dartaero.com>; 'Mike Petsche' <mpetsche@dartaero.com>
Cc: 'Isam El-Kassis' <ielkassis@dartaero.com>; 'Chantal' <clavoie@dartaero.com>; 'Bill Beckett' <bbeckett@dartaero.com>; 'Steve Joseph' <sjoseph@apicalindustries.com>
Subject: RE: 17814

After looking at this more closely, we should be able to use the AMS-QQ-A-250/12 that was originally quoted. No objection on this side to the material change. Let me know what documentation you need to make this happen.

Thanks,

Pablo

From: Jean-Luc Menard [<mailto:jmenard@dartaero.com>]
Sent: Friday, September 14, 2012 5:30 AM
To: 'Linda Lacelle'; 'David Shepherd'; 'Mike Petsche'
Cc: 'Isam El-Kassis'; 'Chantal'; 'Bill Beckett'; 'Pablo Bravo'; 'Steve Joseph'
Subject: RE: 17814

THE 1.250" x 2.00 " would be used on the rail 647.0200.
JL

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Friday, September 14, 2012 7:59 AM
To: 'David Shepherd'; 'Mike Petsche'
Cc: 'Isam El-Kassis'; 'JEANLUC MENARD'; 'Chantal'; 'Bill Beckett'; 'Pablo Bravo'; 'Steve Joseph'
Subject: RE: 17814

JL will get the info on what part it is used in, as the boms are not made yet.
LL

From: David Shepherd [<mailto:dshepherd@dartaero.com>]
Sent: September-14-12 8:12 AM
To: 'Linda Lacelle'; 'Mike Petsche'
Cc: 'Isam El-Kassis'; 'JEANLUC MENARD'; 'Chantal'; 'Bill Beckett'; 'Pablo Bravo'; 'Steve Joseph'
Subject: RE: 17814

Linda,

My understanding is that Pablo Bravo will have to make ALL MRB decisions on the cable cutters since Apical owns the STC.

Therefore, you will need to send an email to Pablo to get a disposition on these types of issues.
What Apical p/n is this for?

PB,

Is the material substitution requested below acceptable?

If not, can you provide guidance on where you were purchasing this material so that Dart purchasing can track it down.

David

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: September-13-12 10:23 AM
To: 'Mike Petsche'
Cc: dshepherd@dartaero.com; 'Isam El-Kassis'; 'JEANLUC MENARD'; 'Chantal'
Subject: RE: 17814

Ok,so where do we go from here?

From: Mike Petsche [<mailto:mpetsche@dartaero.com>]
Sent: September-13-12 11:51 AM
To: Linda Lacelle
Cc: <dshepherd@dartaero.com>; Isam El-Kassis; JEANLUC MENARD; Chantal
Subject: Re: 17814

Cable cutters are largely outside of engineering. We are only manufacturing for apical. Using all apical data.

Sent from my iPhone

On 2012-09-13, at 11:40 AM, "Linda Lacelle" <llacelle@dartaero.com> wrote:

Any news on this pls?

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: September-11-12 12:57 PM
To: dshepherd@dartaero.com; 'Mike Petsche' (mpetsche@dartaero.com)
Cc: Isam El-Kassis (ielkassis@dartaero.com); JEANLUC MENARD (jmenard@dartaero.com)
Subject: FW: 17814
Importance: High

This is the mat'l for the cable cutters. All 7075 this big is cut from plate. So where do we go from here?

LL

From: Marc Bellavance [<mailto:mbellavance@dartaero.com>]
Sent: September-11-12 12:19 PM
To: 'Chantal Lavoie'
Cc: 'Lacelle, Linda'
Subject: RE: 17814

Chantal,

The mechanical properties of a 1.250" thick plate under AMS-QQ-A-250/11 are below the mechanical properties of a 1.250" thick bar under AMS-QQ-A-225/9 and AMS-QQ-A-200/11 so we can't accept to substitute as proposed below.

Marc Bellavance
Technical/Shop Support
T. 613-632-5200 | C. 613-
676-0992 | F. 613-632-
9311

1270 Aberdeen Street,
Hawkesbury, Ontario,
Canada, K6A 2K7

Product Documentation:
Verify Revision
Status/Download HERE!

<image001.jpg>

<image002.png> <image003.png> <image004.png> <image005.png>

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Please consider your environmental responsibility before printing this e-mail.

From: Chantal Lavoie [<mailto:clavoie@dartaero.com>]
Sent: Monday, September 10, 2012 2:39 PM
To: Marc Bellavance
Cc: Lacelle, Linda
Subject: FW: 17814

Hi Marc,
Please see attached for p/o:17814, material line 5 and 7 is spec's QQ-A-250-12 acceptable.
Thanks
Chantal

From: Ivers, Stan [<mailto:Stan.Ivers@thyssenkrupp.com>]
Sent: September 10, 2012 1:41 PM
To: 'Chantal Lavoie'
Subject: RE: 17814

Items 5-7 QQ-A- 250-12 is what was quoted please advise will order items 2-4

Thank you

Regards

Stan Ivers
Inside Sales Rep
ThyssenKrupp material NA
905-532-1350
30shi@tkmna.com

From: Chantal Lavoie [<mailto:clavoie@dartaero.com>]
Sent: Monday, September 10, 2012 12:31 PM
To: Ivers, Stan
Subject: RE: 17814

Sorry Stan,
I add send you this order last week please order.
Thanks
Chantal

From: Ivers, Stan [<mailto:Stan.Ivers@thyssenkrupp.com>]
Sent: September 10, 2012 8:07 AM
To: 'Chantal Lavoie'
Subject: 17814

Good morning Chantal

Please advise status on this p.o as nothing is on order and will miss delivery dates

Thanks

Regards

Stan Ivers
Inside Sales Rep
ThyssenKrupp material NA
905-532-1350
30shi@tkmna.com



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36731

Purchase Order Date 6/16/2017

PO Print Date 6/28/2017

Page Number 1 of 16

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED
JUN 28 2017

REVISED

Contact Name

Vendor Phone

613-446-4544

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
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1	160999	646.3010 LH HALF REV. N/C	7/7/2017		8.00	\$10.25	\$82.00
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Yes

7/7/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N

Line Total: \$82.00

2	160451	646.3011 RH HALF REV. N/C	7/7/2017		9.00	\$10.25	\$92.25
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Yes

7/7/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N

JUL 10 2017

DAS
38
9-89

DAS
26
9-89

Line Total: \$92.25

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

6/28/2017



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913502

Date: 07-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.			
8 ea	Part: 646.3010 LH Half Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21224	Rev: N/C PO: PO36731	Line: 1
4 ea	Part: 647.7911 Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21239	Rev: N/C PO: PO36731	Line: 16
9 ea	Part: 646.3011 RH Half Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21225	Rev: N/C PO: PO36731	Line: 2
26 ea	Part: 646.3716 Gauge Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21230	Rev: A PO: PO36731	Line: 7
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>07/07/2017</u> Made in Canada.			

DAS
26
9-89

DAS
38
9-89
JUL 10 2017



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913502

Date: 07-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms

Ship Via

Quantity

Description

Certified Signature: 

Receiver Signature: _____

A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited.

Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.

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JUL 10 2017

Made in Canada.